Logo

Levels of pro-Inflammatory Mediators CRP, IL-1β and IL-6 in Alkaptonuria Patients

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Background

Alkaptonuria (AKU) is a recessive inborn error disorder associated with joint inflammation and is arising due to the deficient activity of the enzyme homogentisate 1,2-dioxygenase (HGD).

Objectives

comparing levels of inflammatory mediators in patients suffering of the Alkaptonuria disease with controls.

Methods

levels of the pro-inflammatory mediators, CRP, IL-1β and IL-6 in alkaptonuria patients (n = 17)and healthy controls (n = 17) were measured. Their associations with disease severity score and age were addressed.

Results

Table1. Age, serum cytokines levels, disease severity score and urine HGA levels in alkaptonuria patients and controls. Patient score and Urine HGA were null in controls

Variables	Patients n= 17	Control n= 17	Mann-Whitney U	p-value
	Mean±se	Mean±se		
Age (years)	38.7±1.66	37±1.49	49.5	0.5
IL-6 (pg/ml)	1.2±0.25	0.5±0.07	25.5	0.020*
IL-1β (pg/ml)	12.7±4.02	2.4±0.71	51	0.5
CRP (mg/ml)	9.1±3.61	2.3±0.47	46	0.3
disease severity score	33.1±1.94	-	-	-
HGA (g/day)	1±0.07	-	-	-

Table 2. Correlation of the patients' serum CRP, IL-1β and IL-6 levels with the age and disease severity in the AKU patients

Variables	Patient score r^0 , P-value	Patient age r^0, P-value
Disease severity score	1, -	0.4, 0.3
Patient age (years)	0.4, 0.3	1, -
CRP (mg/ml)	0.2, 0.6	0.5, 0.1
IL-6 (pg/ml)	0.698, <0.001*	0.732, <0.001*
Il-1Beta (pg/ml)	0.0, 1	-0.115, 0.7
HGA (g/day)	0.1, 0.7	0.2, 0.6

Summary

The serum concentrations of the IL-1 β, IL-6 and CRP are higher in AKU patients compared with healthy controls, with a significant difference in IL-6 (p = 0.02) and a positive correlation is found between the patients' serum IL-6 and patients' age and the AKU Severity Score.

Conclusion

IL-6 might play a role in the pathogenesis of inflammation in AKU patients and thus targeting it may be one mode of treatment in future

References

Al-sbou, M., Mwafi, N., & Lubad, M. A. (2012). Identification of forty cases with alkaptonuria in one village in Jordan. *Rheumatology International*. 32. 3737-3740.